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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,699	08/20/2003	Yutaka Enko	16869S-091100US	9300
20350 7590 08/03/2007 TOWNSEND AND TOWNSEND AND CREW, LLP TWO EMBARCADERO CENTER EIGHTH FLOOR SAN FRANCISCO, CA 94111-3834			EXAMINER MYINT, DENNIS Y	
			ART UNIT 2162	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/645,699

**Applicant(s)**

ENKO ET AL.

**Examiner**

Dennis Myint

**Art Unit**

2162

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5, 9, 11, 12 and 14-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 9, 11, 12, and 14-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 10, 2007 has been entered.

2. The amendment filed on May 10, 2007 has been received and entered. Claims 1-5, 9, 11, 12, and 14-19 are currently pending in this application. Claims 15-19 are newly added. Claims 1-4, 9, 12, and 14 were amended. Claims 1, 9, 11, and 12 are independent claims.

### ***Response to Arguments***

3. The applicant's arguments filed on May 10, 2007 have been fully considered but are moot in view of the new ground(s) of rejection.

### ***Claim Objections***

4. Claim 16 is objected to because of the following informalities: claim 16 in line 2 recites "files", which should be corrected as "file" Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-5, 9, 11, 12, 14-17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rabinovich (hereinafter "Rabinovich") (U.S. Patent Number 6256675) in view of Kanai et al., (hereinafter "Kanai") (U.S. Patent Application Publication Number 2001/0002472A1) and further in view of Yamada et al., (hereinafter "Yamada") (U.S. Patent Application Publication Number 2004/0221024A1)

As per claim 1, Rabinovich is directed to a computer system comprising a first network, a first computer connected to the first network, a second network connected to the first network, and a second computer and a third computers connected to the second network"( Rabinovich Figure 1: *Host 103, Host 104, Host 105, and Request Distributor 101*, and Column 7 Lines 7-49); the first computer (Request Distributor 101) and teaches the limitations:

"a communication interface for connecting the first computer to the first network" (Rabinovich Figure 1: PORT 110 , and Column 6 Lines 31-33, i.e., *Request distributor 110 also includes a port 110 that is adapted to be coupled to a network 102*);

"a disk storage device for storing data" (Rabinovich Figure 1: *Request distributor 101*, and Column 6 Lines 17-29, i.e., *The request distributor is comprised of a processor 106, and a memory 107 that stores request distribution instructions*);

"a disk interface for communicating data with the disk storage device"  
(Rabinovich Figure 1: *Request Distributor 101*, Column 6 Lines 17-29 and Column 7 Lines 7-49);

"a CPU for controlling the first computer" (Rabinovich Figure 1: *Request distributor 101*, and Column 6 Lines 7-16; and Figure 1: *Host 103*; and Column 6 Line 60 through Column 7 Line 7) ; and

"a memory" (Rabinovich Column 6 Lines 17-29, i.e., *The request distributor is comprised of a processor 106, and a memory 107 that stores request distribution instructions*) "for storing data and a first program" (Rabinovich Column 6 Lines 60-62, i.e., *a request distribution method*; and Figure 2) and "a second program for operating the CPU" (Rabinovich Column 7 Line 38 through Column 8 Line 31, i.e., *The request distributor selects a host that stores a replica of the requested object to respond to the request based upon the request metric and the distance metric; and the request distribution decision as to which host to assign the request is made in accordance with the method shown in Figure 3*),

wherein the program code includes:

"a module for recording situations of access to a file stored in the disk storage device from the third computer" (Rabinovich Column 6 Lines 64-67, i.e., *The request*

*metric for a replica is a historical measure of the request for the object that have been forwarded to the host ), and*

"wherein the program code is executed depending on the access situation"  
(Rabinovich Column 7 Lines 38-44, i.e., *The request distributor selects a host that stores a replica of the requested object to respond to the request based upon the request metric and the distance metric*), "the program code further including:"

"a module for searching the second network connected to the third computer"  
(Rabinovich Column 7 Line 45 through Column 8 Line 31, i.e., *the request distributor decision as to which host to assign the request is made in accordance with the method shown in FIG. 3*);

"a module for searching candidate for migration for the second network"  
(Rabinovich Column 7 Line 45 through Column 8 Line 31, i.e., *the request distributor decision as to which host to assign the request is made in accordance with the method shown in FIG. 3*);

"a module for designating the files as the candidate for migration to the second computer" (Rabinovich Column 7 Lines 47-49, i.e., *A host p is identified that stores a **replica** of the requested object and that has the best distance metric m*; Column 8 Lines 29-31, i.e., *The request for the object is sent to the host with the smallest decision metric, step 403*; Note that by identifying host pas the candidate, the replica on host p is also identified as the candidate for migration);

"a module for transmitting a migrator acceptor search packet to the second computer for inquiring whether or not the second computer can accept the file" (Rabinovich Column 7 Line 64, i.e., *then the request is sent to host p*; and Column 8 Lines 32-49, i.e., *Replica placement decisions and actions are made and taken substantially autonomously by a host*; Column 16 Lines 23 through Column 17 Line 22, i.e., *Host s sends a replication request to E's replicator  $r_E$ , which includes the ID of the object to be replicated and the load on host s generated due to  $x_3$ .  $r_E$  forwards this request along the path with the lowest-loaded hosts.* and pseudo code from Line 28 to 54);

"a module for receiving a reply packet from the second computer as a response to the migrator acceptor search packet" (Rabinovich Column 16 Lines 56-65, i.e., *sends acknowledgement back up the tree to  $r_E$*  and Column 16 Lines 30-35, i.e., *Send Refuse to invoker*);

"a module for receiving a reply packet from the second computer as a response to the migrator acceptor search packet" (Rabinovich Column 16 Lines 56-65, i.e., *sends acknowledgement back up the tree to  $r_E$*  and Column 16 Lines 30-35, i.e., *send refuse to invoker*);

"a module for transferring the file to the second computer" (Rabinovich Column 16 Lines 55-60, i.e., *Host s*);

"a module for storing information indicative of whether the file has been transferred to the second computer or the file exists in the first computer" (Rabinovich,

Column 8 Lines 7-11, i.e., *Each host that stores a replica of the requested object is ranked in decreasing distance metric in relation to the requester, step 401*; Column 14 Lines 25-30, i.e., *Affinity is a compact way of representing multiple replicas of the same object on the same host. When the replica is first created, its affinity is initialized to 1; when an object is migrated or replicated to a host that already has a replica of this object, its affinity is incremented*; and Column 14 Lines 44 through Column 15 Line 18, i.e., pseudocode showing the storing of information indicative of whether a file has been transferred); and

“a module for storing a path name for the second computer when the file has been transferred to the second computer” (Rabinovich, Column 14, Lines 7-24 and Column 6 Lines 7-29; Note that request distributor/replicators in an area are always in communication with other requestor distributors/replicators and advertisement packets are inherent in the method Rabinovich, which notifies placement of replicas in particular network areas (Column 13 Line 44 through Column 14 Line). Therefore, requestors will know exactly where the transferred file is located via distributors/replicators.

Rabinovich does not explicitly teach the following limitations: “the module being executed by the CPU at predetermined intervals” and “module for receiving and storing the file in the first computer, when the file is returned from the second computer”.

On the other hand, Kanai teaches the limitation:

“the module being executed by the CPU at predetermined intervals” (Kanai, Paragraph 0018, i.e., *the step of accessing the electronic information is executed at an interval to collect all of changes in a web page*); and



Yamada teaches the limitation:

“module for receiving and storing the file in the first computer, when the file is returned from the second computer” (Yamada, Paragraph 0095, i.e., *the system may be adapted so that the log file 10 is downloaded from the server 100 to and provided in the client 200, that the log file 10 is updated in the client 200 according to the execution state of the installation in the client 200, and that the log file 10 is returned to the server 100 before the client 200 is rebooted, and downloaded to the client 200 after rebooted, and thereafter updated according to the execution of the installation in the client 200*).

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to add the feature of executing a software module at predetermined intervals, as taught by Kanai, and the feature of returning a file from a second computer to a first computer to be stored on the first computer, as taught by Yamada, so that, in the resultant computer system, the module for recording situation of access to a file would be executed at predetermined intervals and a module would receive and store the file in the first computer, when the file is returned from the second computer. One would have been motivated to so do in order to record access/data changes/updates at desirable intervals, which is a well known feature in the art, and in order to retain the data in the form of a replica or copy to facilitate data restoration if needed in the future (Yamada, Paragraph 0009).

As per claim 2, Rabinovich in view of Kanai and further in view of Yamada is directed to the limitations:

“wherein: the memory stores a path of the file accessed by the third computer associating the with information on the access situations of the third computer” (Rabinovich Column 14, Lines 7-24, i.e., *total access count*) , and

“the program code further includes a module for designating the file corresponding to the access situation information as the candidate for migration when the information satisfies a predetermined condition” (Rabinovich Column 14, Lines 7-24, i.e., *So, an entity that frequently appears in preference paths may be a good candidate for placing an object replica*).

As per claim 3, Rabinovich in view of Kanai and further in view of Yamada teaches the limitation:

“wherein the program code further includes a module for transmitting an advertisement packet, indicating the file has been transferred to the second computer, to the second network” (Rabinovich Column 15 Line 17, i.e. ***send OffLoadRequest(s) to the parent replicator of s;*** and Column 13 Line 44 through Column 14 Line 7, i.e., *Replicators act as outside representatives of their regions to outside hosts and Decisions on replica placement are done in cooperation between hosts and the replication service* ).

As per claim 4, Rabinovich in view of Kanai and further in view of Yamada teaches the limitation:

"wherein: the third computer comprises a memory for storing data and a program code" (Rabinovich Figure 1: *Host 103, Host 104, Host 105, and Request Distributor 101*, and Column 7 Lines 7-49), and

"the program code in the memory of the third computer includes a module for receiving the advertisement packet and a module for making access to the second computer for the file according to the advertisement packet" (Rabinovich Column 6 Lines 7-29, i.e., *and distribute the request to a host (e.g. host 103) that stores a replica of the requested object*). Note that request distributor/replicators in an area are always in communication with other requestor distributors/replicators and advertisement packets are inherent in the method Rabinovich, which notifies placement of replicas in particular network areas (Rabinovich Column 13 Line 44 through Column 14 Line).

As per claim 5, Rabinovich in view of Kanai and further in view of Yamada teaches the limitation:

"wherein: the first network is further connected to a third network, and the program code further includes a module for transmitting the migrator acceptor search packet to the third network when no computer suitable for accepting the file is found in the second network" (Rabinovich Figure 1: *Host 103, Host 104, Host 105, Request Distributor 101, Network 102, and Requestor 109* and Column 16 Lines 23 through Column 17 Line 22). Note that the method of Rabinovich has replicators in a hierarchy (Rabinovich Column 13 Line 44 through Column 14 Line 25). If there is no computer suitable for accepting the file, acceptor search packets are inherently sent to

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other replicators in the higher levels of the hierarchy until a suitable one is found. Since the replicators are connected to Internet, there are more than one network, thus second, third, and more networks.

Claim 9 is rejected on the same basis as claim 1.

As per claim 11, Rabinovich in view of Kanai and further in view of Yamada teaches the limitations:

“a program stored in a memory of a second computer which is connected to a second network capable of communicating with a first network and which makes access to a file of a first computer connected to the first network” (Rabinovich Figure 1: *Host 103, Host 104, Host 105, Request Distributor 101, Network 102, and Requestor 109*), comprising:

“a module for making access to the file via an interface of the second computer to the second network using a path name after reception of the path name to a third computer as a destination of the file transferred from the first computer” (Column 6 Lines 7-29, i.e., *and distribute the request to a host (e.g. host 103) that stores a replica of the requested object*).

Note that request distributor/replicators in an area are always in communication with other requestor distributors/replicators and advertisement packets are inherent in the method Rabinovich, which notifies placement of replicas in particular network areas

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(Rabinovich Column 13 Line 44 through Column 14 Line). Therefore, requestors will know exactly where the transferred file is located via distributors/replicators.

Claim 12 is rejected on the same basis as claim 1.

As per claim 14, Rabinovich in view of Kanai and further in view of Yamada teaches the limitation:

"wherein the program code further includes a module for transferring a directory belonging to the file to the second computer" (Rabinovich Column 16 Lines 55-60, i.e., *Host s*). Note that the system and methods of Rabinovich migrating a replica, which could be a file or files or a directory or directories.

As per claim 15, Rabinovich in view of Kanai and further in view of Yamada teaches the limitation:

"wherein the program code further includes a module for transmitting the path name when the first computer receives an access request for the file" (Rabinovich, column 10 Line 31 through Column 12 Line 16).

As per claim 16, Rabinovich in view of Kanai and further in view of Yamada teaches the limitation:

"wherein the file stored into the second computer when the file is transferred from the first computer to the second computer" (Rabinovich Column 7 Line 38 through

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Column 8 Line 31, i.e., *The request distributor selects a host that stores a replica of the requested object to respond to the request based upon the request metric and the distance metric; and the request distribution decision as to which host to assign the request is made in accordance with the method shown in Figure 3).*

As per claim 17, Rabinovich in view of Kanai and further in view of Yamada teaches the limitation:

*"wherein the file is returned from the second computer to the first computer depending on another access situation" (Rabinovich Column 6 Lines 64-67, i.e., The request metric for a replica is a historical measure of the request for the object that have been forwarded to the host; Rabinovich, Column 15 Lines 38-46, i.e., A host s can be in one of the two modes of operation. If its load exceeds high-water mark hw, it switches to an offloading mode, where it sheds objects to other hosts, even if it is not geographically beneficial. Once in this mode, the host continues in this manner until its load drops below a low water mark, lw. Then, it moves objects only if it is geographically beneficial, and stays in this mode until its load again exceeds hw. Water-marking is a standard technique to add stability to the system; and Yamada, Paragraph 0095, i.e., the system may be adapted so that the log file 10 is downloaded from the server 100 to and provided in the client 200, that the log file 10 is updated in the client 200 according to the execution state of the installation in the client 200, and that the log file 10 is returned to the server 100 before the client 200 is rebooted, and downloaded to the client 200*

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*after rebooted, and thereafter updated according to the execution of the installation in the client 200).*

As per claim 19, Rabinovich in view of Kanai and further in view of Yamada teaches the limitation:

“wherein the module for transferring the file to the second computer is performed if the response indicates that the second computer accepts the file and the second computer has a capacity for storing the file” (Rabinovich, Column 11 Line 30 through Column 12 Line 17).

7. Claims 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rabinovich in view of Kanai and further in view of Yamada and further in view of Sunna (U.S. Patent Application Publication Number 2006/0036892).

As per claim 18, Rabinovich in view of Kanai and further in view of Yamada teaches the limitation: “the file is returned from the second computer to the first computer” (Yamada, Paragraph 0095, i.e., *the system may be adapted so that the log file 10 is downloaded from the server 100 to and provided in the client 200, that the log file 10 is updated in the client 200 according to the execution state of the installation in the client 200, and that **the log file 10 is returned to the server 100** before the client 200 is rebooted, and downloaded to the client 200 after rebooted, and thereafter updated according to the execution of the installation in the client 200).*

Rabinovich in view of Kanai and further in view of Yamada does not explicitly teach the limitation: "a module for deleting the path name".

On the other hand, Sunna teaches the limitation:

"a module for deleting the path name" (Sunna, Paragraph 0071, i.e., *When an LSP is no longer needed in the network 100, an **LSP delete** message is propagated through the nodes 110.sub.j defining the deleted LSP*).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to add the feature of deleting a path, as taught by Sunna, to the computer system of Rabinovich in view of Kanai and further in view of Yamada so that the resultant system would comprise a module to delete a path name. One would have been motivated to do so in order to reflect the new location of a migrated file, which is notoriously well known in the art.




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**Contact Information**

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Myint whose telephone number is (571) 272-5629. The examiner can normally be reached on 8:30AM-5:30PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-5629.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
SHAHID ALAM  
PRIMARY EXAMINER

  
Dennis Myint  
Examiner  
AU-2162